

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in this application.

LISTING OF CLAIMS:

1. (Withdrawn) A guide wire comprising:
a first wire disposed on the distal side of said guide wire; and
a second wire disposed on the proximal side from said first wire, said second wire being made from a material having an elastic modulus larger than that of said first wire;
wherein said first wire and second wire are joined to each other by welding without axial overlap; and
said second wire has, in the vicinity of a welded portion between said first wire and said second wire, a small cross-sectional area portion having a cross-sectional area smaller than a cross-sectional area of a proximal end face of said first wire.
2. (Withdrawn) A guide wire according to claim 1, further comprising a cover layer disposed over at least said welded portion.
3. (Withdrawn) A guide wire according to claim 1, wherein said small cross-sectional area portion has an outer diameter smaller than an outer diameter of the proximal end portion of said first wire.

4. (Withdrawn) A guide wire according to claim 1, wherein said small cross-sectional area portion includes a portion having a cross-sectional area gradually reduced in the direction toward the distal end of said guide wire.

5. (Withdrawn) A guide wire according to claim 1, wherein said small cross-sectional area portion includes a portion having an outer-diameter gradually reduced in the direction toward the distal end of said guide wire.

6. (Withdrawn) A guide wire according to claim 1, wherein said small cross-sectional area portion includes a first portion having an outer diameter gradually reduced in the direction toward the distal end of said guide wire, and a second portion having an outer diameter gradually increased in the direction toward the distal end of said guide wire, said second portion being disposed on said distal side from said first portion.

7. (Withdrawn) A guide wire according to claim 6, wherein said small cross-sectional area portion has a third portion having a nearly constant outer diameter, said third portion being disposed between said first portion and said second portion.

8. (Withdrawn) A guide wire according to claim 6, wherein said first portion has a length in a range of 0.1 to 1,000 times a length of said second portion.

9. (Withdrawn) A guide wire according to claim 7, wherein said first portion has a length in a range of 0.1 to 1,000 times a length of said second portion.

10. (Withdrawn) A guide wire according to claim 1, wherein a flexural rigidity of the distal end of said second wire is nearly equal to a flexural rigidity of the proximal end of said first wire.

11. (Withdrawn) A guide wire according to claim 1, further comprising a step filling member for filling a stepped portion formed on the outer periphery of said welded portion.

12. (Withdrawn) A guide wire comprising:
a first wire disposed on the distal side of said guide wire; and
a second wire disposed on the proximal side from said first wire, said second wire having rigidity higher than a rigidity of said first wire;

wherein said first wire and said second wire are joined to each other by welding without axial overlap, and a welded portion formed by welding has a projection projecting in the outer peripheral direction; and

said second wire has, in the vicinity of a welded portion between said first wire and said second wire, a small cross-sectional area portion having a cross-sectional area smaller than a cross-sectional area of a proximal end face of said first wire.

13. (Withdrawn) A guide wire according to claim 12, further comprising a cover layer disposed over at least said welded portion.

14. (Withdrawn) A guide wire according to claim 12, wherein said small cross-sectional area portion has an outer diameter smaller than an outer diameter of the proximal end portion of said first wire.

15. (Withdrawn) A guide wire according to claim 12, wherein said small cross-sectional area portion includes a portion having a cross-sectional area gradually reduced in the direction toward the distal end of said guide wire.

16. (Withdrawn) A guide wire according to claim 12, wherein said small cross-sectional area portion includes a portion having an outer-diameter gradually reduced in the direction toward the distal end of said guide wire.

17. (Withdrawn) A guide wire according to claim 12, wherein said small cross-sectional area portion includes a first portion having an outer diameter gradually reduced in the direction toward the distal end of said guide wire, and a second portion having an outer diameter gradually increased in the direction toward the distal end of said guide wire, said second portion being disposed on said distal side from said first portion.

18. (Withdrawn) A guide wire according to claim 17, wherein said small cross-sectional area portion has a third portion having a nearly constant outer diameter, said third portion being disposed between said first portion and said second portion.

19. (Withdrawn) A guide wire according to claim 17, wherein said first portion has a length in a range of 0.1 to 1,000 times a length of said second portion.

20. (Withdrawn) A guide wire according to claim 18, wherein said first portion has a length in a range of 0.1 to 1,000 times a length of said second portion.

21. (Withdrawn) A guide wire according to claim 12, wherein a flexural rigidity of the distal end of said second wire is nearly equal to a flexural rigidity of the proximal end of said first wire.

22. (Withdrawn) A guide wire according to claim 12, further comprising a step filling member for filling a stepped portion formed on the outer periphery of said welded portion.

23. (Currently Amended) A method of making a guide wire comprising;
positioning a first wire comprising a first end portion having an end face which possesses a cross-sectional area adjacent a second wire comprising a first end portion having an end face which possesses a cross-sectional area so that the first end portion of the first wire is adjacent the first end portion of the second wire, the first end portion of the first wire being made from a material having an elastic modulus that is different from the elastic modulus of the material from which the first end portion of the second wire is made, the first end portion of the first wire is a

proximal end portion of the first wire, and the first end portion of the second wire is a distal end portion of the second wire;

welding the first end portion of the first wire and the first end portion of the second wire to one another without axial overlap to produce a guide wire having a welded portion; and

the cross-sectional area of the end face of the first end portion of the second wire being less than the cross-sectional area of the end face of the first end portion of the first wire ~~either before the welding or~~ at least after the welding.

24. (Canceled)

25. (Previously Presented) The method of making a guide wire according to claim 24, wherein the elastic modulus of the distal end portion of the second wire is greater than the elastic modulus of the proximal end portion of the first wire.

26. (Previously Presented) The method of making a guide wire according to claim 25, further comprising reducing the cross-sectional area of the distal end portion of the second wire after the proximal end portion of the first wire and the distal end portion of the second wire are welded to one another.

27. (Previously Presented) The method of making a guide wire according to claim 25, wherein the cross-sectional area of the distal end portion of the second wire is reduced by grinding.

28. (Withdrawn) The method of making a guide wire according to claim 25, wherein the cross-sectional area of the distal end portion of the second wire is less than the cross-sectional area of the proximal end portion of the first wire before the proximal end portion of the first wire and the distal end portion of the second wire are welded to one another.

29. (Previously Presented) The method of making a guide wire according to claim 23, further comprising reducing the cross-sectional area of the first end portion of the second wire after the first end portion of the first wire and the first end portion of the second wire are welded to one another.

30. (Previously Presented) The method of making a guide wire according to claim 29, wherein the cross-sectional area of the distal end portion of the second wire is reduced by grinding.

31. (Withdrawn) The method of making a guide wire according to claim 23, wherein the cross-sectional area of the first end portion of the second wire is less than the cross-sectional area of the first end portion of the first wire before the first end portion of the first wire and the first end portion of the second wire are welded to one another.

32. (Previously Presented) The method of making a guide wire according to claim 23, wherein the first end portion of the second wire which possesses a cross-sectional area smaller than the cross-sectional area of the first end portion

possesses a flexural rigidity nearly equal to a flexural rigidity of the first end portion of the first wire.

33. (Previously Presented) The method of making a guide wire according to claim 23, wherein the first end portion of the second wire comprises a first portion whose outer diameter is gradually reduced toward the distal end portion of the second wire and a second portion whose outer diameter is gradually increased toward the distal end portion of the second wire, the second portion being disposed on the distal side from the first portion.

34. (Previously Presented) The method of making a guide wire according to claim 33, wherein the first end portion of the second wire further comprises a third portion between the first portion and the second portion, the third portion possessing a nearly constant outer diameter smaller than the outer diameters of the first portion and the second portion.

35. (New) A method of making a guide wire comprising:
positioning a first wire comprising a proximal end portion having an end face which possesses a cross-sectional area adjacent a second wire comprising a distal end portion which possesses a cross-sectional area so that the proximal end portion of the first wire is adjacent the distal end portion of the second wire, the proximal end portion of the first wire being made from a material having an elastic modulus that is different from the elastic modulus of the material from which the distal end portion of the second wire is made;

welding the proximal end portion of the first wire and the distal end portion of the second wire to one another without axial overlap to produce a guide wire having a welded portion; and

the cross-sectional area of the distal end portion in a vicinity of the welded portion of the second wire being less than the cross-sectional area of the end face of the proximal end portion at least after the welding.